

1995

Go for environment friendly aquaculture

Aquaculture Department, Southeast Asian Fisheries Development Center

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Aquaculture is the farming of aquatic plants and animals (fishes, shrimps, crabs, shells). It may involve seed production (hatchery-nursery) and grow-out production phases. It may be undertaken in land-based or water-based enclosures, either in fresh-, brackish-, or marine waters. In the Philippines, aquaculture has steadily increased its contribution to total fisheries production from only 13.7% in 1978 to 25.3% in 1987. Milkfish and tilapia farming has contributed significantly to the domestic fish supply, and shrimp farming to export earnings.

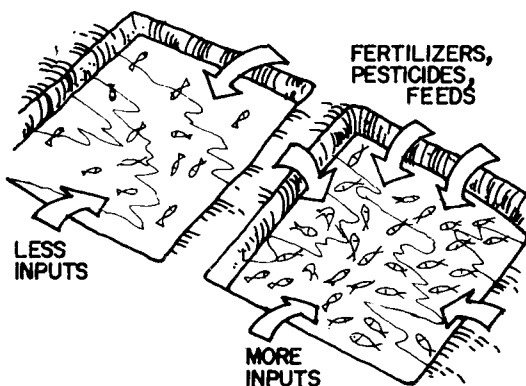
While aquaculture can have considerable economic benefits, it can also have adverse environmental (socioeconomic and ecological) effects:

- Poor farming communities become poorer, with more of the benefits accruing to those already with money.
- Former natural habitats become fragmented.
- Soil, water and landspace qualities deteriorate.
- Animal and plant diversity declines.
- Harmful chemicals and microbes get into common waters.

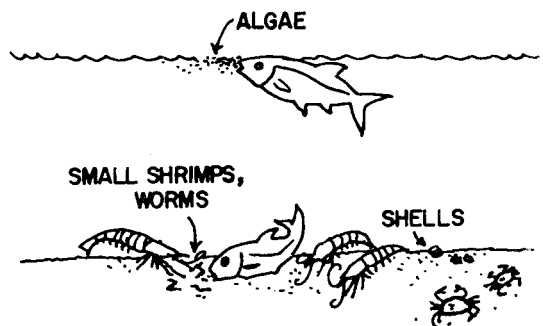
However, this need not be the case if aquaculture facilities are properly designed, operated, managed, and monitored. Aquaculture practitioners and the general public (through advocacy) can take action for environment-friendly aquaculture.

- Go for sustainable, low-input, high-yield culture systems.
- Select native species that feed low on the food chain (plankton-, grass-, or detritus-feeders), grow fast, breed naturally, are disease-resistant and hardy. This eliminates the need for feeds and chemicals such as fertilizers, pesticides, antibiotics and hormones. Exotic species, which may carry diseases and pests or displace local populations, must not be farmed unless they have gone through a stringent quarantine.
- Select proper sites for aquaculture facilities to minimize the environmental impact.
- Conduct a thorough, honest socioeconomic and ecological impact assessment before proceeding with the implementation. Ask who benefits or profits and who loses in

**Semi-intensive farming
(with less feed, fertilizer,
and pesticide inputs)
rather than intensive
farming**



**Polyculture (milkfish with
crab, shrimp, or seabass)
rather than monoculture**



terms of jobs and income; how much land, energy, water, labor, and other resources are diverted from other uses; how the wastes will affect the surrounding community.

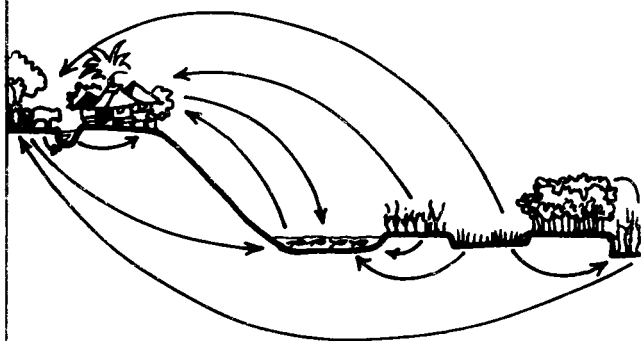
- Practice and promote proper pond/cage/tank preparation and management. Keep buffer strips of mangroves or other trees around the ponds to minimize erosion. Minimize pond tillage that exposes acid soils. If feeds must be used, use the appropriate kind and amount.
- Oppose the clearing of mangrove forests, wetlands, and other virgin areas for new ponds. Replant mangroves or other trees along the dikes of ponds.
- Oppose stream modification and massive ground water extraction for aquaculture. They can cause soil salinization, land subsidence, and flooding.
- Keep freshwater fishponds weed-free and well-stocked to control mosquitoes. Be aware of the water-borne diseases present in the locality and assess whether the establishment and operation of ponds significantly add to

the risks of contraction by farm workers, fish handlers and consumers. Seek professional advice from public health workers.

- Support the ban on the production, sale and use of antibiotics, hormones and pesticides in food production.
- Clean (properly treat) waste effluents from aquaculture facilities to prevent adverse effects on other water users. Rimp farms, set aside some filter ponds stocked with filter-feeding mussels and nutrient-consuming seaweeds. Route the pond effluents (with the excess feeds and other wastes) through the filter pond before disposal into coastal waters. Since antibiotics, pesticides and hormones can not be removed from effluents, do not use these chemicals.

Source: T. Bagarinao, I. Tendencia, R. Elizon, M. Castanos and the Environment Action Group. Towards a Viable Environment: What Individuals Can Do. SEAFDEC Aquaculture Dept. Tigbauan, Iloilo. In press.

Integrated agriculture-aquaculture systems (fish-rice, fish-livestock, others)



Seafarming (seaweed farms, oyster and mussel culture, fish cages) in open marine waters rather than in inland waters and mangrove swamps

